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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/784,059	02/20/2004	Freddy Guthlein	P04,0009	6845
26574	7590	02/02/2005	EXAMINER	
SCHIFF HARDIN, LLP PATENT DEPARTMENT 6600 SEARS TOWER CHICAGO, IL 60606-6473				THOMAS, COURTNEY D
		ART UNIT		PAPER NUMBER
		2882		

DATE MAILED: 02/02/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/784,059	GUTHLEIN ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Courtney Thomas	2882	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) Responsive to communication(s) filed on 20 February 2004.  
 2a) This action is FINAL.                    2b) This action is non-final.  
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) Claim(s) 1-16 is/are pending in the application.  
 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
 5) Claim(s) \_\_\_\_\_ is/are allowed.  
 6) Claim(s) 1-4, 13, 15 and 16 is/are rejected.  
 7) Claim(s) 5-12 and 14 is/are objected to.  
 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) The specification is objected to by the Examiner.  
 10) The drawing(s) filed on 20 February 2004 is/are: a) accepted or b) objected to by the Examiner.  
     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
 a) All    b) Some \* c) None of:  
 1. Certified copies of the priority documents have been received.  
 2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | Paper No(s)/Mail Date. _____  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
|  | 6) <input type="checkbox"/> Other: _____                                    |

## **DETAILED ACTION**

### ***Claim Objections***

1. Claims 2-14 are objected to because of the following informalities:
2. Claim 2, line 2, recites the phrase: "... that can be connected..." Examiner notes that the claim language suggests an optional functionality and concludes that its meaning is ambiguous with respect to determining what applicants consider being their invention. Examiner suggests the use of positive recitation to overcome this objection. By virtue of their dependency, dependent claims 3-14 are similarly treated.
3. Claim 5, line 4 recites: "...the other of the drive disc..." Examiner notes that previous claim 2 does not suggest the presence of more than one drive disc (see claim 2, line 3). Examiner further notes that the claim as written appears ambiguous (see also claim 9, line 4)
4. Claim 5, line 5 recites: "... the first projection." Examiner suggests the phrase be re-written as: "... the first projections."
5. Claim 10, line 5 recites: "... *the side* having first recesses..." Examiner notes there is no antecedent basis for this phrase.
6. The claims have not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the claims.
7. Appropriate correction is required.

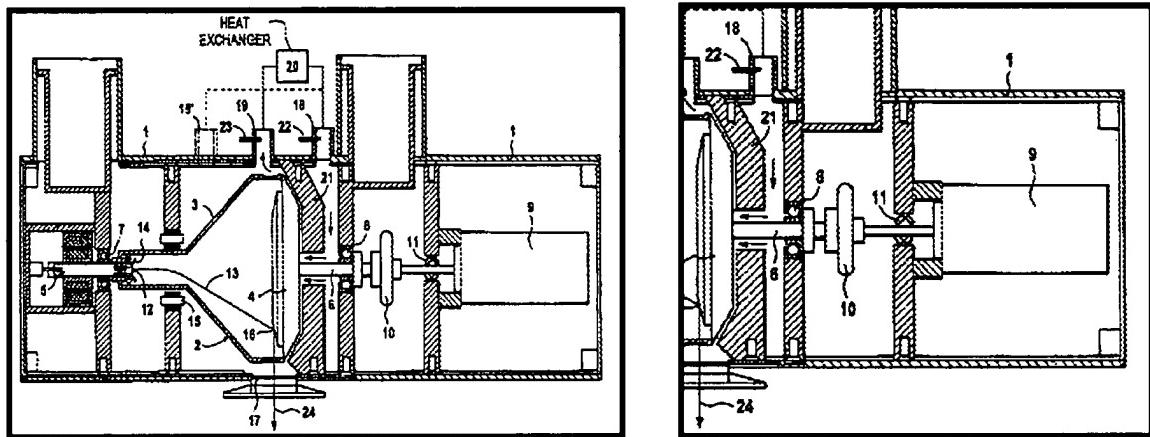
***Claim Rejections - 35 USC § 102***

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

9. Claims 1, 15 and 16 are rejected under 35 U.S.C. 102(b) as being anticipated by Hell et al. (U.S. Patent 6,084,942).



10.

**Figure 1 - X-ray Radiator (w/ exploded sectional view) – U.S. Patent 6,084,942 to Hell et al.**

11. As per claims 1, 15 and 16, Hell et al. disclose an X-ray radiator having a rotary bulb tube (2) mounted for rotation in a housing (1) filled with a coolant (see Abstract; also column 2, lines 46-49), the rotary bulb tube being connected by a shaft arrangement (5, 6) having a coupling (10) to a means for rotating the bulb tube (9 - see also column 2, lines 43-45); wherein the coupling is surrounded by the housing and wherein the rotary bulb tube includes an anode plate (4) facing the inside of the housing (see also Fig. 1 above).

***Claim Rejections - 35 USC § 103***

12. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

13. Claims 2-4 and 13 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Hell et al. (U.S. Patent 6,084,942).

14. As per claims 2-4, Hell et al. disclose an X-ray radiator as substantially recited in claim 1, wherein the coupling (10) comprises an output disc (not numbered above) connected with a first shaft section (6) extending from the rotary bulb tube (2), a drive disc (not numbered above) connected to a second shaft section (not numbered above) extending from the motor (9) and an intermediate disc (10) connecting the output disc with the drive disc. Examiner notes that Fig. 1 illustrates a coupling arrangement meeting the structural limitations of claim 2. It would be appreciated by those having ordinary skill in the X-ray tube art that the disclosed coupling serves as a means of transferring rotational power from the motor (9) via the coupling element and shaft stubs (see column 2, lines 43-45). Though silent as to the material construction of the output disc, drive disc and intermediate disc, it would be appreciated by those having ordinary skill in the art at the time the invention was made to construct an arrangement whereby the shaft stubs, output disc and drive disc are formed of a metal to provide structural rigidity and performance within an elevated temperature environment. Additionally, it would have been obvious to produce intermediate disc of an insulating material such as a plastic or ceramic. One would have been motivated to make such a modification for the purpose of providing a coupling element

with insulating properties to reduce the likelihood of thermal transfer between coupled elements as well as the buildup of static charge resulting from rotating components. A benefit of such arrangement would result in a reduction of wasted heat, whereby natural convection could be exploited to transport heat away from the tube as suggested by Hell et al. (column 1, lines 12-20).

15. **As per claim 13,** Hell et al. disclose an X-ray radiator wherein the second shaft section is directed through a gap in the housing and provided with a seal (11 - see Fig. 1, above).

***Allowable Subject Matter***

16. Claims 5-12 and 14 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

17. **As per claim 5 and dependent claims 6-8,** the examiner found no reference in the prior art that disclosed or made obvious an X-ray radiator wherein the coupling has a non-positive connection between the drive disc and the intermediate disc comprising first projections extending from one of the drive disc and intermediate disc being received in first recesses in the drive disc and intermediate disc, each first recess being fashioned to receive the first projections, as recited in claim 5.

18. **As per claim 9,** the examiner found no reference in the prior art that disclosed or made obvious an X-ray radiator which has a non-positive connection between the output disc and the intermediate disc, the non-positive connection being formed by one of the output disc and intermediate disc having second projections extending therefrom and the output disc and

intermediate disc having second recesses fashioned to receive the second projections to form the non-positive connection, as recited in claim 9.

19. **As per claim 10 and dependent claims 11-12,** the examiner found no reference in the prior art that disclosed or made obvious an X-ray radiator wherein the drive disc has first projections extending therefrom and the intermediate disc has first recesses designed to receive the first projections to form a non-positive connection there between, the output disc having second projections and the intermediate disc on a side opposite a side having the first recesses having second recesses fashioned to receive the second projections to form a non-positive connection between the output disc and the intermediate disc as recited in claim 10.

20. **As per claim 14,** the examiner found no reference in the prior art that disclosed or made obvious an X-ray radiator wherein a seal engages a hub portion of a drive disc of the coupling as recited in claim 14.

### *Conclusion*

21. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure: U.S. Patents 6,426,6998 (Fig. 1), 6,412,979 (Fig. 3), 6,396,901 (Fig. 1), 6,164,820 (Fig. 4) to Hell et al. disclose X-ray radiators comprising rotating bulb tubes whose vacuum housing rotates within the radiator housing filled with fluid coolant.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Courtney Thomas whose telephone number is (571) 272-2496. The examiner can normally be reached on M - F (9 am - 5 pm).

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ed Glick can be reached on (571) 272 2490. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Courtney Thomas  
Examiner  
Art Unit 2882